

Amendments to the Drawing:

Figure 1 has been amended to change reference number 10 to 19, to correctly show the stacking bolt; and reference number 2b has been changed to 2(2b) to correctly show the fuel cell stack unit. The drawing changes are made in a paper labeled Replacement Sheet attached to this paper.

REMARKS

This Amendment is filed in response to the Office Action dated August 9, 2006. For the following reasons this application should be allowed and the case passed to issue. No new matter is introduced by this Amendment. The amendment to Fig. 1 is supported by the specification at paragraphs [0015] and [0018].

Claims 1-14 are pending in this application. Claims 1-14 have been rejected.

Claim Rejections Under 35 U.S.C. § 102

Claims 1, 2, and 5-14 were rejected under 35 U.S.C. § 102(b) as being anticipated by Hatano et al. (JP 2001-143742). This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested. The following is a comparison between the present invention, as claimed, and the cited prior art.

An aspect of the invention, per claim 1, is a fuel cell assembly mounted in a vehicle comprising a fuel cell stack comprising plural fuel cells stacked in a fixed direction. A case housing the fuel cell stack permits expansion and contraction of the fuel cell stack in the fixed direction. An elastic member supports the case in the vehicle.

Another aspect of the invention, per claim 14, is a fuel cell assembly mounted in a vehicle comprising a fuel cell stack comprising plural fuel cells stacked in a fixed direction. A case housing the fuel cell stack. A supporting member supports both ends of the fuel cell stack in the case. A bolt fixes the supporting member to the case. The bolt extends in a perpendicular direction to the fixed direction.

The Examiner asserted that Hatano et al. disclose a structure including endplates at either end of the fuel cell stack to expand and contract in the direction of lamination, and a rubber mounting to fix the fuel cell structure to the car.

Hatano et al. disclose a fuel cell stack 12(14) gripped by endplates 16(18) and 24(26) (*see* Fig. 2). The endplate 24(26) is connected to a rubber mount 168, which is shown on the left side portion of the figure, via a bracket 162a(b). The endplate 16(18) is connected to a rubber mount 168, which is shown on right side portion of the figure, via a bracket 160a(b).

When the fuel cell stack 12(14) expands and contracts due to temperature variation, the distance between the endplates 16, 24 and (18, 26) varies accordingly. Since the distance between the bolts 170a which support the rubber mounts 168 is fixed, the variation in the distance between the endplates 16, 24 (18, 26) is compensated by a special connection structure between the bracket 160a(b) and the rubber mount 168 shown in the right side portion of the figure. The bracket 160a(b) has an elongated hole 164a(b) in the direction of the expansion and contraction of the fuel cell stack 12(14). A bolt 170a protrudes from the rubber mount 168 penetrates through the elongated hole 164a(b) and is secured by a nut 174.

According to the above special connection structure, when the fuel cell stack 12(14) expands or contracts, the elongated hole 164a(b) of the bracket 160a(b) moves relative to the bolt 170a.

Thus, the mounting structure according to Hatano et al. allows the fuel cell stack to expand and contract. However, the construction of the mounting structure is different from the present invention. In Hatano et al., the variation in the distance between the endplates 16, 24 (18, 26) is compensated by the relative movement between the elongated hole 164a(b) of the bracket 160a(b) and the bolt 170a as a part of the rubber mount assembly. Since the bracket 160a(b) is always exerting a vertical load on the rubber mount 168, when there is a relative movement in a horizontal direction therebetween, a shearing force is inevitably exerted on the rubber mount 168. When the rubber mount has deformed due to the action of the shearing force,

the vibration blocking function of the rubber mount is not fully manifested. Further, if the deformation acts for a long time period, the durability of the rubber mount will be impaired, as explained in the SUMMARY OF THE INVENTION of the present invention (paragraph [0004]).

In the present invention a case housing the fuel cell stack permits expansion and contraction of the fuel cell stack in the fixed direction. Because expansion and contraction of the fuel cell stack is compensated within the case, no relative movement is required between the case itself and the vehicle, and hence the elastic member which supports the case in the vehicle does not suffer a shearing force due to expansion and contraction of the fuel cell stack. Hatano et al. do not disclose such a case housing.

The factual determination of lack of novelty under 35 U.S.C. § 102 requires the disclosure in a single reference of each element of a claimed invention. *Helifix Ltd. v. Blok-Lok Ltd.*, 208 F.3d 1339, 54 USPQ2d 1299 (Fed. Cir. 2000); *Electro Medical Systems S.A. v. Cooper Life Sciences, Inc.*, 34 F.3d 1048, 32 USPQ2d 1017 (Fed. Cir. 1994); *Hoover Group, Inc. v. Custom Metalcraft, Inc.*, 66 F.3d 399, 36 USPQ2d 1101 (Fed. Cir. 1995); *Minnesota Mining & Manufacturing Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992); *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051 (Fed. Cir. 1987). Because Hatano et al. do not disclose a fuel cell stack comprising plural fuel cells stacked in a fixed direction and a case housing the fuel cell stack that permits expansion and contraction of the fuel cell stack in the fixed direction, as required by claim 1; and a fuel cell stack comprising plural fuel cells stacked in a fixed direction, a case housing the fuel cell stack, a supporting member that supports both ends of the fuel cell stack in the case, and a bolt that fixes the supporting member to the case, wherein the bolt extends in a perpendicular

direction to the fixed direction, as required by claim 14, Hatano et al. do not anticipate claims 1 and 14.

Applicant further submits that Hatano et al. do not suggest the claimed fuel cell assemblies.

Claim Rejections Under 35 U.S.C. § 103

Claims 3 and 4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hatano et al. in view of Chen (U.S. Pat. No. 6,274,258). This rejection is traversed, and reconsideration and withdrawal thereof respectfully requested.

The Examiner acknowledged that Hatano et al. fail to teach an expansion/contraction mechanism. The Examiner asserted that Chen teaches endplates of a fuel cell system having scalloped edges to engage the inside surface of the outer case and that the scalloped edges correspond to the claimed depressions and projections.

The combination of Hatano et al. and Chen, however, does not suggest the claimed fuel cell assembly at least because Chen does not cure the deficiencies of Hatano et al. Chen does not suggest a fuel cell stack comprising plural fuel cells stacked in a fixed direction and a case housing the fuel cell stack that permits expansion and contraction of the fuel cell stack in the fixed direction, as required by claim 1; and a fuel cell stack comprising plural fuel cells stacked in a fixed direction, a case housing the fuel cell stack, a supporting member that supports both ends of the fuel cell stack in the case, and a bolt that fixes the supporting member to the case, wherein the bolt extends in a perpendicular direction to the fixed direction, as required by claim 14.

In view of the above amendments and remarks, Applicant submits that this application should be allowed and the case passed to issue. If there are any questions regarding this

Application No.: 10/656,227

Amendment or the application in general, a telephone call to the undersigned would be appreciated to expedite the prosecution of the application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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